1: Arch Tierernahr. 1994;46(4):357-65. Related Articles, Links

The adherence of three Streptococcus bovis strains to cells of rumen epithelium primoculture under various conditions.

Styriak I, Galfi P, Kmet V.

Department of Microbiology, Slovak Academy of Sciences, Kosice.

Three Streptococcus bovis strains were tested in biotype assay and examined for the adherence to cells of rumen epithelium primoculture. The adherence pattern of ruminal streptococci in phosphate buffered saline at pH values ranging from 4.1 to 8.5 was determined. Our isolates of Streptococcus bovis strains adhered best at pH 7.0-7.3. To characterize the adhesive determinants, the bacterial cells were exposed to various treatments. Protease treatment dramatically decreased the adherence of all Streptococcus bovis strains, thus suggesting that the determinants responsible for the adherence are largely proteinaceous. Carbohydrates could be also significantly involved in the active sites of bacterial surface because metaperiodate-treated cells adhered much more poorly than control, sodium iodate-treated cells. Addition of carbohydrates (lactose, maltose and saccharose) had no significant effect on the adherence of Streptococcus bovis strains although a slight decrease in the adhesion was detected.

PMID: 7778984 [PubMed - indexed for MEDLINE]

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FILE 'BIOSIS' ENTERED AT 14:10:43 ON 18 DEC 2005

FILE 'SCISEARCH' ENTERED AT 14:10:43 ON 18 DEC 2005

FILE 'CAPLUS' ENTERED AT 14:10:43 ON 18 DEC 2005


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=> s IgY
L1         2032 IGY

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L2            0 L1 AND STREPTOCOCCUS BOVIS

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L3            5 L1 AND BOVIS

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PROCESSING COMPLETED FOR L3
L4             5 DUP REMOVE L3 (0 DUPLICATES REMOVED)

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L4   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2005 ACS on STN
2004:681184   Document No. 141:172883  Passive immunity with avian antibodies
     to respiratory pathogens.  Nash, Peter; Mitteness, Bradley M. (USA).  U.S.
     Pat. Appl. Publ. US 2004161427 A1 20040819, 12 pp.  (English).  CODEN:
     USXXCO.  APPLICATION: US 2004-775557 20040210.  PRIORITY: US
     2003-2003/PV447904 20030219.
AB   The authors disclose the preparation and application of fowl egg antibodies in
     preventing the attachment of adherence of colony-forming immunogens in the
     respiratory tracts of host animals and humans.  The inhibitory antibodies
     are made by inoculating female birds (e.g., chickens) with the immunogen,
     harvesting the eggs which contain antibodies to the immunogen, and separating
     the yolk and albumin from the shells of the eggs.  The yolk and albumin
     contents are administered to animals or human by distributing the contents
     directly or introducing the contents entrained in air.  In one example,
     antibodies derived from chickens were immunized with Pasteurella and
     Haemophilus immunogens were delivered as a top dressing to feed for swine.
     Compared to baseline controls, treated swine exhibited less mortality and
     a reduced requirement for antibiotic medication.

L4   ANSWER 2 OF 5  CAPLUS  COPYRIGHT 2005 ACS on STN
2003:737787   Document No. 139:244716  Multifunctional immune complexes for
     microbial phagocytosis.  Pitkovski, Jacob; Morag, Ely; Pinchasov, Yosef
     (Yamit Biotechnologies Ltd., Israel).  PCT Int. Appl. WO 2003076471 A2
     20030918, 91 pp.  DESIGNATED STATES: W:  AE, AG, AL, AM, AT, AU, AZ, BA,
     BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,
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ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-IL196 20030310. PRIORITY: IL 2002-148598 20020310.

AB The authors disclose multi-functional targeting complexes for inducing phagocytosis of pathogenic agents. The complexes of the invention comprises at least one target recognition component comprising a mol. that specifically binds to the desired target agent, an immuno-active component comprising an immuno-stimulatory agent; and optionally, a connecting component that assocs. the targeting component and the immuno-active component. In one example, the targeting component is biotinylated **IgY**, the immuno-active component is anti-avidin IgG, and the connecting component is avidin-conjugated polystyrene microbeads. The complex of the invention provides an effective therapeutic prevention and treatment of various pathogenic disorders, such as mastitis in cows and furunculosis in fish. The invention further relates to compns. comprising the targeting complex, methods of treatment and uses thereof.

L4 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

2004:963810 Document No. 142:239111 Method for the production of an egg containing anti-Edwardsiella tarda **IgY**, anti-Streptococcus iniae **IgY** and Mycobacterium **bovis IgY** simultaneously, egg produced thereby, and fish feed containing. Baek, Ban Seok; Han, Chan Gyu; Huh, Gang Jun; Kim, Yeong Bung; Ko, Seong Chan; Lee, Nam Hyeong; Noh, Jeong Hae; Shin, Tae Beom; Son, Dong Hwa; Sung, Gi Seung (Korea Food Development Institute, S. Korea). Repub. Korean Kongkae Taeho Kongbo KR 2003000261 A 20030106, No pp. given (Korean). CODEN: KRXXA7. APPLICATION: KR 2001-35945 20010622.

AB A Method for the production of an egg containing anti-Edwardsiella tarda **IgY**, anti-Streptococcus iniae **IgY** and Mycobacterium **bovis IgY** simultaneously, an egg produced thereby and a fish feed containing specific **IgY** thereof are provided. The produced egg and fish feed have excellent prevention effect on a flatfish disease. An emulsion containing Edwardsiella tarda **IgY**, anti-Streptococcus iniae **IgY**, Mycobacterium **bovis IgY** and aluminum oxide in ratio of 3.0:3.0:1.0:3.0 is inoculated into a chicken in the amount of 1.0 mL one time, and then, from a 2nd time, the above emulsion and an adjuvant (ISA25) are inoculated together there into in the amount of 1.0 mL at intervals of 2 wk to produce an egg containing specific **IgY**. Egg yolk is then put up in a vessel, stirred in the equal amount of alkali ion water (pH 10.0), left alone for a specified period of time and then the supernatant is ultra-filtrated and freeze-dried after removing a fat layer floated on the upper layer to produce soluble **IgY** powder.

L4 ANSWER 4 OF 5 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

2002:807867 The Genuine Article (R) Number: 598TE. Stable biocompatible adjuvants - a new type of adjuvant based on solid lipid nanoparticles: A study on cytotoxicity, compatibility and efficacy in chicken. Olbrich C (Reprint); Muller R H; Tabatt K; Kayser O; Schulze C; Schade D. Free Univ Berlin, Dept Pharmaceut Technol Biopharm & Biotechnol, Kelchstr 31, D-12169 Berlin, Germany (Reprint); Free Univ Berlin, Dept Pharmaceut Technol Biopharm & Biotechnol, D-12169 Berlin, Germany; State Dept Consumer Protect, D-15234 Frankfurt, Germany; Humboldt Univ, Charite, Inst Pharmacol & Toxicol, Fac Med, D-10117 Berlin, Germany. ATLA-ALTERNATIVES TO LABORATORY ANIMALS (JUL-AUG 2002) Vol. 30, No. 4, pp. 443-458. ISSN: 0261-1929. Publisher: FRAME, RUSSELL & BURCH HOUSE 96-98 NORTH SHERWOOD ST, NOTTINGHAM NG1 4EE, NOTTS, ENGLAND. Language: English. *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB A new type of adjuvant was tested for its ability to initiate antibody production in chickens, and its cellular and tissue compatibility

were assessed. The stable biocompatible adjuvants tested are based on surface-modified solid lipid nanoparticles (SLNs), made from paraffin or biodegradable glycerides, and are simply admixed to the antigens before administration. The tissue-damaging potency of four formulations of the new adjuvants (H1, H2, H3 and H4) were first tested in vitro by using human foreskin fibroblasts and RAW 264.7 macrophages. The adjuvants were well tolerated by both cell types. Immunisation studies in chickens were performed by using a Mycoplasma **bovis** antigen and mouse immunoglobulin G (IgG). The resulting antibodies were non-invasively extracted from egg yolk. The use of the various adjuvant formulations resulted in a significant production of specific antibodies after the first and second booster immunisations. Freund's complete adjuvant (FCA), considered until now to be the "gold standard" among the adjuvants, revealed the highest antibody titre against mouse IgG. SLNs with a particle size of more than 100nm exhibited a clear adjuvant activity, whereas SLNs with a particle size below 100nm, in various concentrations, revealed a lower adjuvant activity. Immunisation of chickens with the mouse IgG alone, dissolved in phosphate-buffered saline, resulted in a slow development of antibody titre. At the end of the experiment, the chickens were examined for vaccination-associated tissue damage. In contrast to FCA, the SLN formulations caused only minor tissue irritation at the injection sites. In conclusion, SLNs seem to be a promising alternative to FCA for antibody production in chickens, and potentially in other animals.

L4 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
1997:49220 Document No. 126:130593 Oral administration of chicken yolk immunoglobulins to lower somatic cell count in the milk of lactating ruminants. Coleman, Marilyn A. (Ovimmune, Inc., USA). U.S. US 5585098 A 19961217, 6 pp., Cont. of U.S. Ser. No. 156,540, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1995-369310 19950106. PRIORITY: US 1993-156540 19931123.

AB A method for lowering somatic cell count in the milk of a lactating ruminant is disclosed. **IgY** antibodies are first obtained from the egg of a hen which has been actively immunized against one or more mastitis-causing pathogenic organisms by injection with an immunogen containing immunogenic determinants specific to elicit such antibodies. The immunogenic determinant may comprise only a specific portion of the pathogenic organism, e.g., the fimbria of a ciliated bacterium. The **IgY** antibodies are then administered orally to a ruminant in which it is desired to lower milk somatic cell count. Antibody administration may occur during a ruminant's dry period as well as during lactation. In a preferred embodiment, the antigen used in immunization of the hen comprises one or more of Staphylococcus aureus and Streptococcus agalactiae. The method of this invention has been shown to be efficacious in lowering somatic cell count in dairy cattle.

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L6            3 DUP REMOVE L5 (0 DUPLICATES REMOVED)

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L6   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2005 ACS on STN
2004:681184  Document No. 141:172883  Passive immunity with avian antibodies
     to respiratory pathogens.  Nash, Peter; Mitteness, Bradley M.
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(USA). U.S. Pat. Appl. Publ. US 2004161427 A1 20040819, 12 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-775557 20040210. PRIORITY: US 2003-2003/PV447904 20030219.

AB The authors disclose the preparation and application of fowl egg antibodies in preventing the attachment of adherence of colony-forming immunogens in the respiratory tracts of host animals and humans. The inhibitory antibodies are made by inoculating female birds (e.g., chickens) with the immunogen, harvesting the eggs which contain antibodies to the immunogen, and separating the yolk and albumin from the shells of the eggs. The yolk and albumin contents are administered to animals or human by distributing the contents directly or introducing the contents entrained in air. In one example, antibodies derived from chickens were immunized with Pasteurella and Haemophilus immunogens were delivered as a top dressing to feed for swine. Compared to baseline controls, treated swine exhibited less mortality and a reduced requirement for antibiotic medication.

L6 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

2004:182241 Document No. 140:198089 Immunogen adherence inhibitor directed to lactic acid producing organisms and method of making and using it. Nash, Peter; **Mitteness, Bradley M.** (USA). U.S. Pat. Appl. Publ. US 2004043020 A1 20040304, 16 pp., Cont.-in-part of U.S. Ser. No. 38,260. (English). CODEN: USXXCO. APPLICATION: US 2003-658491 20030908. PRIORITY: US 1999-PV143985 19990715; US 2000-2000/PV20126U 20000502; US 2000-2000/616843 20000714; US 2002-2002/38260 20020107.

AB A microbial adherence inhibitor specific to lactic acid producing microorganisms, in the form of fowl egg antibodies is disclosed, along with the method of making it and methods of using it. The inhibitor functions by substantially preventing the attachment or adherence of colony-forming immunogens in the rumen and intestinal tracts of host food animals. The inhibitor is made by inoculating female birds with the immunogen, allowing time for an immune response in the female bird and then harvesting the eggs that contain antibodies to the immunogen. The egg contents can be dried or used as a liquid and added to the feed or water for the host animals. Dependent upon the particular immunogen with which the female bird is inoculated, the egg antibody is used to promote the growth of food animals by improving feed conversion rates by decreasing the lactic acid production caused by the presence of certain colony-forming organisms in the animals, and to substantially reduce or eliminate the incidence of species that have been linked to very high production of lactic acid which can result in reduced performance and in acute situations, dangerously low rumen pH levels. When high levels of lactic acid are present in the rumen, rumen ulcers can form. When rumen ulcers are present other bacteria such as Fusobacterium necrophorum can escape the rumen and cause liver abscesses or laminitis, which further reduce feed conversion efficiency. Colony forming immunogens such as Streptococcus bovis (a major lactic acid producer) and Fusobacterium necrophorum can both be targeted by antibodies to enhance feed efficiency.

L6 ANSWER 3 OF 3 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

2004:222554 Document No.: PREV200400223573. Influence of a polyclonal antibody preparation against rumen proteolytic bacteria on rumen fermentation and yield of milk and milk components. Dahlen, C. R. [Reprint Author]; DiCostanzo, A.; **Mitteness, B. M.**; Nash, P.; Larson, J. E.; DiLorenzo, N.; Marx, G. D. [Reprint Author]. Northwest Research and Outreach Center, University of Minnesota, Crookston, MN, USA. Journal of Dairy Science, (2003) Vol. 86, No. Supplement 1, pp. 58-59. print. Meeting Info.: Joint Annual Meeting of the American Dairy Science Association, the American Society of Animal Science and the Mexican Association of Animal Production. Phoenix, Arizona, USA. June 22-26, 2003. American Dairy Science Association; American Society of Animal Science. CODEN: JDSCAE. ISSN: 0022-0302. Language: English.

=> s streptococcus bovis
L7 4000 STREPTOCOCCUS BOVIS

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L8          112 L7 AND ACIDOSIS

=> s l8 and antibod?
L9           18 L8 AND ANTIBOD?

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L10            8 DUP REMOVE L9 (10 DUPLICATES REMOVED)

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L10  ANSWER 1 OF 8  CAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:182241  CAPLUS
DN   140:198089
TI   Immunogen adherence inhibitor directed to lactic acid producing organisms
     and method of making and using it
IN   Nash, Peter; Mitteness, Bradley M.
PA   USA
SO   U.S. Pat. Appl. Publ., 16 pp., Cont.-in-part of U.S. Ser. No. 38,260.
     CODEN: USXXCO
DT   Patent
LA   English
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     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
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PI   US 2004043020        A1    20040304    US 2003-658491          20030908
     US 2002098181        A1    20020725    US 2002-38260           20020107
     US 2005226861        A1    20051013    US 2005-85674           20050321
PRAI US 1999-143985P      P     19990715
     US 2000-201268P      P     20000502
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     US 2002-38260        A2    20020107
     US 2002-39977        A1    20020108


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L10  ANSWER 1 OF 8  CAPLUS  COPYRIGHT 2005 ACS on STN
2004:182241   Document No. 140:198089  Immunogen adherence inhibitor directed
     to lactic acid producing organisms and method of making and using it.
     Nash, Peter; Mitteness, Bradley M. (USA).  U.S. Pat. Appl. Publ. US
     2004043020 A1 20040304, 16 pp., Cont.-in-part of U.S. Ser. No. 38,260.
     (English).  CODEN: USXXCO.  APPLICATION: US 2003-658491 20030908.
     PRIORITY: US 1999-PV143985 19990715; US 2000-2000/PV20126U 20000502; US
     2000-2000/616843 20000714; US 2002-2002/38260 20020107.
AB   A microbial adherence inhibitor specific to lactic acid producing
     microorganisms, in the form of fowl egg antibodies is disclosed,
     along with the method of making it and methods of using it.  The inhibitor
     functions by substantially preventing the attachment or adherence of
     colony-forming immunogens in the rumen and intestinal tracts of host food
     animals.  The inhibitor is made by inoculating female birds with the
     immunogen, allowing time for an immune response in the female bird and
     then harvesting the eggs that contain antibodies to the
     immunogen.  The egg contents can be dried or used as a liquid and added to
     the feed or water for the host animals.  Dependent upon the particular
     immunogen with which the female bird is inoculated, the egg
     antibody is used to promote the growth of food animals by
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improving feed conversion rates by decreasing the lactic acid production caused by the presence of certain colony-forming organisms in the animals, and to substantially reduce or eliminate the incidence of species that have been linked to very high production of lactic acid which can result in reduced performance and in acute situations, dangerously low rumen pH levels. When high levels of lactic acid are present in the rumen, rumen ulcers can form. When rumen ulcers are present other bacteria such as Fusobacterium necrophorum can escape the rumen and cause liver abscesses or laminitis, which further reduce feed conversion efficiency. Colony forming immunogens such as **Streptococcus bovis** (a major lactic acid producer) and Fusobacterium necrophorum can both be targeted by **antibodies** to enhance feed efficiency.

=> d l10 1-8 cbib abs

L10 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
2004:182241 Document No. 140:198089 Immunogen adherence inhibitor directed to lactic acid producing organisms and method of making and using it. Nash, Peter; Mitteness, Bradley M. (USA). U.S. Pat. Appl. Publ. US 2004043020 A1 20040304, 16 pp., Cont.-in-part of U.S. Ser. No. 38,260. (English). CODEN: USXXCO. APPLICATION: US 2003-658491 20030908. PRIORITY: US 1999-PV143985 19990715; US 2000-2000/PV20126U 20000502; US 2000-2000/616843 20000714; US 2002-2002/38260 20020107.

AB A microbial adherence inhibitor specific to lactic acid producing microorganisms, in the form of fowl egg **antibodies** is disclosed, along with the method of making it and methods of using it. The inhibitor functions by substantially preventing the attachment or adherence of colony-forming immunogens in the rumen and intestinal tracts of host food animals. The inhibitor is made by inoculating female birds with the immunogen, allowing time for an immune response in the female bird and then harvesting the eggs that contain **antibodies** to the immunogen. The egg contents can be dried or used as a liquid and added to the feed or water for the host animals. Dependent upon the particular immunogen with which the female bird is inoculated, the egg **antibody** is used to promote the growth of food animals by improving feed conversion rates by decreasing the lactic acid production caused by the presence of certain colony-forming organisms in the animals, and to substantially reduce or eliminate the incidence of species that have been linked to very high production of lactic acid which can result in reduced performance and in acute situations, dangerously low rumen pH levels. When high levels of lactic acid are present in the rumen, rumen ulcers can form. When rumen ulcers are present other bacteria such as Fusobacterium necrophorum can escape the rumen and cause liver abscesses or laminitis, which further reduce feed conversion efficiency. Colony forming immunogens such as **Streptococcus bovis** (a major lactic acid producer) and Fusobacterium necrophorum can both be targeted by **antibodies** to enhance feed efficiency.

L10 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
2001:31351 Document No. 134:105826 Vaccines for the control of **acidosis**. Rowe, James Baber; Al Jassim, Rafat A. M. (The University of New England, Australia). PCT Int. Appl. WO 2001002008 A1 20010111, 96 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-AU805 20000703. PRIORITY: AU 1999-1376 19990702.

AB The present invention relates to a vaccine for the prevention of lactic **acidosis** in a vertebrate, the vaccine comprising at least one isolated microorganism, or fragments thereof, wherein the microorganism is

capable of producing lactic acid within the gut of the vertebrate, and wherein the microorganism is selected from the group consisting of: Clostridium-like species, Prevotella-like species, Bacteroides-like species, Enterococcus-like species, Selenomonas species, non-dextran slime producing Streptococcus species and non-slime producing lactic acid bacterial isolates.

L10 ANSWER 3 OF 8 MEDLINE on STN DUPLICATE 1
2001179873. PubMed ID: 11214671. **Antibody** response in sheep following immunization with **Streptococcus bovis** in different adjuvants. Shu Q; Bir S H; Gill H S; Duan E; Xu Y; Hiliard; Rowe J B. (Division of Animal Science, University of New England, Armidale, NSW, Australia.. Q.Shu@massey.ac.nz) . Veterinary research communications, (2001 Jan) 25 (1) 43-54. Journal code: 8100520. ISSN: 0165-7380. Pub. country: Netherlands. Language: English.

AB Recent studies have shown that immunization with **Streptococcus bovis** using Freund's complete adjuvant (FCA) may confer protection against lactic **acidosis** in sheep. The major objective of this study was to compare the **antibody** responses to S. bovis in a practically acceptable adjuvant (Freund's incomplete adjuvant (FIA); QuilA; dextran sulphate (Dex); Imject Alum; or Gerbu) and in FCA. Thirty-five sheep were randomly allocated to 7 treatment groups. Six groups were immunized with S. bovis in an adjuvant; the other group served as the non-immunization control. The primary immunization was administered intramuscularly on day 0. followed by a booster injection on day 28. Immunization with FCA induced the highest saliva and serum **antibody** responses. The saliva **antibody** concentrations in the FIA and QuilA groups were significantly higher than those in the Alum, Dex and Gerbu groups ($p < 0.01$). The serum **antibody** concentration in the FIA group was significantly higher than those in the QuilA, Alum. Dex and Gerbu groups ($p < 0.01$). Immunization enhanced the **antibody** level in faeces ($p < 0.05$), but there was no significant difference between the different adjuvant groups ($p > 0.05$). Seven and 14 days following booster immunization, the saliva **antibody** levels induced by QuilA and/or FIA were comparable with the level stimulated by FCA ($p > 0.05$). There was a strongly positive correlation ($R2 = 0.770$, $p < 0.01$) between the **antibody** concentrations in salival and serum. Compared with the controls, a higher faecal dry matter content was observed in the animals immunized with either FCA or QuilA. The change in faecal dry matter content was positively associated with the faecal **antibody** concentration ($R2 = 0.441$, $p < 0.05$). These results indicate that FIA and QuilA were effective at inducing high levels of **antibody** responses to S. bovis, and suggest that either Freund's incomplete adjuvant or QuilA may be useful for preparing a practically acceptable vaccine against lactic **acidosis**.

L10 ANSWER 4 OF 8 MEDLINE on STN DUPLICATE 2
2000407874. PubMed ID: 10775788. Immunization with **Streptococcus bovis** protects against lactic **acidosis** in sheep. Gill H S; Shu Q; Leng R A. (Division of Animal Science, University of New England, Armidale, Australia.. h.s.gill@massey.ac.nz) . Vaccine, (2000 May 22) 18 (23) 2541-8. Journal code: 8406899. ISSN: 0264-410X. Pub. country: ENGLAND: United Kingdom. Language: English.

AB Lactic **acidosis** is a gastrointestinal disorder resulting from the rapid overgrowth of lactic acid-producing bacteria when ruminants are suddenly introduced to grain feed. The present study has investigated the ability of live and killed bacterial vaccines to reduce lactic **acidosis** in sheep, via a stimulation of specific **antibody** production against lactic acid-producing bacteria. Forage-fed sheep were immunized with live or killed **Streptococcus bovis** Sb-5 vaccine, with or without adjuvant, via intramuscular injection. After the primary immunization, three boosters were given at 2-4 week intervals. Sheep were subsequently challenged by a sudden switch to a grain-based diet. Following challenge, vaccinated sheep maintained significantly higher feed intake, and had higher rumen pH, lower L-lactate

concentrations, and less severe diarrhoea scores than non-vaccinated control sheep. Higher rumen pH, lower mortality and less severe diarrhoea were found in the animals immunized with live vaccine compared to the animals immunized with killed vaccines. Significant increases in mucosal and systemic **antibody** responses were observed after boosting; the S. bovis-specific **antibody** concentrations were significantly higher in samples of saliva, rumen fluid and serum from sheep immunized with live vaccine than with killed vaccines. These results demonstrate that lactic **acidosis** can be reduced by immunization against S. bovis, and that live Sb-5 vaccine is effective in invoking mucosal as well as systemic **antibody** responses.

L10 ANSWER 5 OF 8 MEDLINE on STN DUPLICATE 3
2000240225. PubMed ID: 10775471. Immunization with a **Streptococcus bovis** vaccine administered by different routes against lactic **acidosis** in sheep. Shu Q; Gill H S; Leng R A; Rowe J B. (Division of Animal Science, University of New England, Armidale, Australia.. Q.shu@massey.ac.nz) . Veterinary journal (London, England : 1997), (2000 May) 159 (3) 262-9. Journal code: 9706281. ISSN: 1090-0233. Pub. country: ENGLAND: United Kingdom. Language: English.

AB **Streptococcus bovis** is an important lactic acid bacterium in the rumen, which contributes to the development of lactic **acidosis.** This study was designed to test the efficacy of immunization with S. bovis primed either intramuscularly (i.m.) or intraperitoneally (i.p.) against lactic **acidosis.** Forty-five wethers were allocated to three treatment groups. Two groups were injected with a S. bovis vaccine by either the i.m. or i.p. route for primary immunization; both groups were further immunized by the same route(s) (oral and/or i.m.) for boosters. The third group was not immunized (control). **Antibody** concentrations were measured in saliva prior to and following animals being fed a grain diet, and also in the rumen fluid, before the animals were suddenly introduced to a grain diet. The average **antibody** concentration in the animals of the i.m. group was higher than the i.p. group ($P < 0.05$). The **antibody** concentration in the rumen fluid of immunized sheep was higher than the control animals ($P < 0.01$). The difference in the rumen fluid **antibody** concentration between the i.m. and i.p. groups was not statistically significant ($P > 0.05$). In the i.m. group, there was a significantly greater feed intake, higher rumen pH, lower diarrhoea scores, and less increase in blood packed cell volume following grain feeding than in the animals of the control group. The severity of diarrhoea and the increase of blood packed cell volume in the animals of the i. p. group were also less than in the animals of the control group. The results suggest that the risk of lactic **acidosis** can be reduced by immunization against S. bovis, and that the immunization primed i. m. is more effective than the immunization primed i.p.

L10 ANSWER 6 OF 8 EMBASE
1999365115 EMBASE Immunological cross-reactivity between the vaccine and other isolates of **Streptococcus bovis** and Lactobacillus. Shu Q.; Bird S.H.; Gill H.S.; Rowe J.B.. Q. Shu, Milk and Hlth Research Centre, Inst. Food, Nutrition/Human Hlth, Massey University, Palmerston North, New Zealand. q.shu@massey.ac.nz. FEMS Immunology and Medical Microbiology Vol. 26, No. 2, pp. 153-158 1999.
Refs: 26.
ISSN: 0928-8244. CODEN: FIMIEV
S 0928-8244(99)00135-2. Pub. Country: Netherlands. Language: English. Summary Language: English.

ED Entered STN: 19991104

AB Recent studies have showed that immunisation with **Streptococcus bovis** (Sb-5) and Lactobacillus (LB-27) may confer protection against lactic **acidosis** in sheep and cattle. The present study was designed to determine the degree of immunological cross-reactivity

between Sb-5 and eight other strains of **Streptococcus bovis**; and between LB-27 and four other isolates of Lactobacillus. The cross-reactivity index (CRI, a low CRI indicates a high degree of immunological cross-reactivity) ranged from 7.3 to 56.1% between the strains of S. bovis (the encapsulated strains with CRIs ranging from 7.3 to 12.4%). For isolates of Lactobacillus the CRIs ranged from 11.5 to 72.2%. The results indicate that all the isolates tested have a certain degree of immunological homology with Sb-5 and LB-27, and suggest that the vaccine may cross-react with a large number of strains of S. bovis and Lactobacillus which may cause lactic **acidosis**. As most of the S. bovis strains in the rumen are encapsulated, the high degree of homology between Sb-5 and encapsulated S. bovis strains further suggests that the vaccine containing Sb-5 may be effective against a wide range of strains of S. bovis in sheep and cattle.

L10 ANSWER 7 OF 8 MEDLINE on STN DUPLICATE 4

1999355989. PubMed ID: 10425243. Immunisation against lactic **acidosis** in cattle. Shu Q; Gill H S; Hennessy D W; Leng R A; Bird S H; Rowe J B. (Department of Animal Science, University of New England, Armidale, NSW, 2351, Australia.) Research in veterinary science, (1999 Aug) 67 (1) 65-71. Journal code: 0401300. ISSN: 0034-5288. Pub. country: ENGLAND: United Kingdom. Language: English.

AB The present study was designed to investigate the efficacy of control of lactic **acidosis** by immunisation against lactic acid-producing bacteria, **Streptococcus bovis** and Lactobacillus. Ten steers were allocated to two treatment groups. One group was immunised with a vaccine containing S. bovis (strain Sb-5) and Lactobacillus (LB-27) cells, and the other was a non-immunised control group. The vaccine, using Freund's complete adjuvant for primary immunisation and Freund's incomplete adjuvant for boosters, was administered intramuscularly. After primary immunisation, boosters were given at 2 to 4 week intervals. Both anti- S. bovis and anti- Lactobacillus IgG levels in saliva increased significantly ($P < 0.01$) after the 1st booster which were lower ($P < 0.05$) than the IgG levels after the 2nd and 3rd boosters, but were not significantly different ($P > 0.05$) from the IgG levels prior to a grain challenge (after the 4th booster). There were positive correlations between the anti- S.bovis and anti- Lactobacillus IgG in serum and saliva. Compared with the control group, steers in the immunised group had higher ($P < 0.05$) feed intakes, lower ($P < 0.05$) rumen concentrations of lactate and lower numbers of S. bovis and Lactobacillus. Three of the control animals were withdrawn from the grain challenge due to their rumen pH persisting below 5.2, while only one animal in the immunised group was withdrawn. These results suggest that the risk of lactic **acidosis** can be reduced by immunisation against S. bovis and Lactobacillus.

L10 ANSWER 8 OF 8 CAPLUS

1996:664925 Document No. 125:284886 Method and vaccine for prevention of over-production of acids in the rumen or gut of animals. Leng, Ronald Alfred; Gill, Harsharnjit Singh; Shu, Quan (University of New England, Australia). PCT Int. Appl. WO 9628177 A1 19960919, 32 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1996-AU143 19960314. PRIORITY: AU 1995-1754 19950314.

AB A method of preventing the over-production of acid in an animal comprises administering to the animal a vaccine including an acid producing microorganism and/or antigenic fragment or fragments thereof effective to prevent the over-production of acid in the animal. The vaccine includes lactic acid producing microorganisms obtainable from the normal glut flora of an animal. In particular the vaccine includes **Streptococcus bovis** and/or Lactobacillus spp. Lambs were vaccinated with a

suspension of S. bovis treated with Freund's complete adjuvant and Freund's incomplete adjuvant, then seven days after the last immunization all lambs were introduced to a grain-based diet. S. bovis specific **antibody** in serum increased from 1.5 to 233.6 units/mL after 75 days. The immunized lambs exhibited significantly higher intake and rumen pH at all observation times and the incidence and severity of diarrhea were also significantly lower in immunized lambs than those of control lambs.

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---Logging off of STN---

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Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	79.86	80.07

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-7.30	-7.30

STN INTERNATIONAL LOGOFF AT 14:25:18 ON 18 DEC 2005